Externship Descriptions

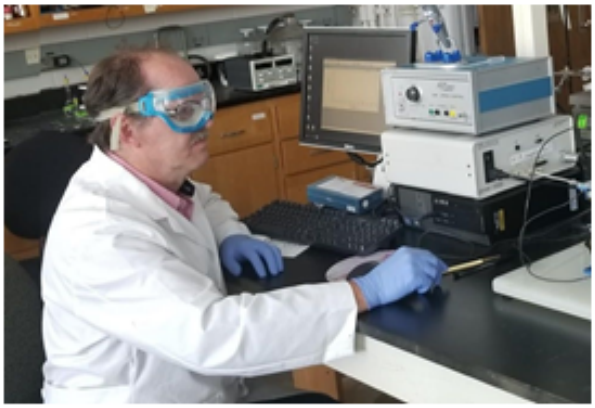
Laboratory Sciences

Marc Benedict

University of Iowa – Leddy Research Lab

Iowa City, IA

Marc worked within the Leddy Research Group at the University of Iowa. He conducted research using cyclic voltammetry to characterize the electrochemical behavior of an organic compound that has different electrochemical responses in and out of magnetic fields.



Audra Duster

Renewable Energy Group

Ames, IA

Audra worked in REG's chemistry lab where she assisted with quality control tests on biodiesel samples from refineries. She also tested samples generated by the lab engineers who are always trying to find better feedstocks or improve the processes at the plants to make a better product. Lastly, she got to spend some time working with their life sciences department investigating bacteria that can be genetically modified to produce useful chemicals.

Caleb Grulke

Kemin

Des Moines, IA

For his externship at Kemin, Caleb worked with their specialty crops improvement (SCI) team on phytochemical extraction from plant biomass. He worked on several different projects using distillation and solvent extraction to isolate the desired molecules from the plant mass. They then used analysis methods to determine the yield of their sample harvest. This helps Kemin determine the efficiency of the current harvesting and extraction processes used at the industrial scale as well as determine what new projects may be profitable.

Anthony Hooper

POET

Coon Rapids, IA

Anthony's first project he worked on was to gather data and work on utilization of antifoam agents for the fermenters. There are several commercial products available, but there are also some natural possibilities that can be reclaimed and recycled in the process. He experimented in the lab to get a rough idea of the efficacy of these materials. Theoretically, reducing foam allows the fermenters to be filled slightly more, which produces more ethanol per batch.

Mike Wells

Monsanto

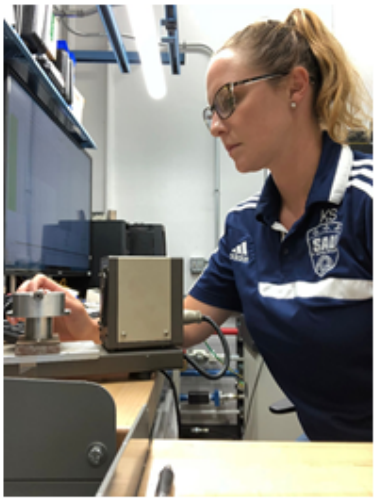
Muscatine, IA

One task that Mike took on was looking at Monsanto's training protocols for their new lab procedures from an educator's point of view and helped them create training material that will hopefully ensure that their analysts are prepared for their new lab. As those in teaching have switched from "teaching to learning", so should our businesses and trainers when they are giving new material to their employees. After completing this training, Mike worked on various tests that are happening in the lab with the hopes to find a more efficient way to save time and energy for the future.

Kelly Schroeder

John Deere ADV Lab

Moline, IL



The project that Kelly worked on with John Deere was testing aluminum and iron specimens to test their life cycles. If John Deere is able to figure out how to make the aluminum and iron specimens last in their machinery, there could be major savings in the material. There were a lot of different measuring tools that Kelly learned to use, including a laser measure. After Kelly measured the specimen, she typed it in a Excel spreadsheet that they later used to enter the cycle that the specimen fails at. Kelly learned how to test and analyze the data that comes from the fatigue testing that they performed.